

42 10. (Amended) An electoptical system which contains a liquid crystal film or layer according to claim 1.

Please add the following new claims.

30. Liquid crystal film with homeotropic alignment wherein said hemitropic alignment is achieved by an aligning layer on a substrate wherein said aligning layer is a smooth Al_2O_3 layer.

43 31. Liquid crystal film according to claim 30 wherein the substrate is a polymeric material.

32. Liquid crystal film according to claim 31 wherein the substrate is a plastic sheet or film.

33. Liquid crystal film according to claim 30 wherein the substrate prior to its coating with the alignment layer or its precursor is subjected to a corona discharge.

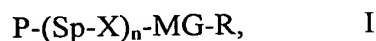
34. Process of fabricating a homeotropically oriented liquid crystal film according to claim 30 which comprises applying an aligning layer as defined in claim 30 on a substrate.

35. An electoptical system which contains a liquid crystal film according to claim 30.

36. A liquid crystal film as in claim 30, wherein said aligning layer is a thin transparent Al_2O_3 coating.

37. Liquid crystal film as in claim 30 prepared from a layer comprising one or more polymerizable mesogenic compounds.

38. Liquid crystal film as in claim 30 prepared from a mixture comprising reactive mesogenic compounds of formula I



wherein

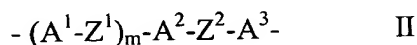
P is a polymerizable group

Sp is a spacer group having 1 to 20 C atoms,

X is a group selected from -O-, -S-, -CO-, -COO-, -OCO-, -OCO-O- or a single bond;

n is 0 or 1,

MG is a mesogenic or mesogeneity supporting group, according to formula II



wherein A¹, A²

and A³ are independently from each other 1,4-phenylene in which, in addition, one or more CH groups may be replaced by N, 1,4-cyclohexylene in which, in addition, one or two non-adjacent CH₂ groups may be replaced by O and/or S, 1,4-cyclohexenylene or naphthalene-2,6-diyl, it being possible for all these groups to be unsubstituted, mono- or poly-substituted with halogen, cyano or nitro groups or alkyl, alkoxy or acyl groups having 1 to 7 C atoms wherein one or more H atoms may be substituted by F or Cl,

Z¹ and Z² are each independently -COO-, -OCO-, CH₂CH₂-, -OCH₂-, -CH₂O-, -CH₂=CH-, -C≡C-, -CH=CH-COO-, -CO-CH=CH- or a single bond

and

m is 0, 1 or 2,

and

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R is an alkyl radical with up to 25 C atoms which may be unsubstituted, mono- or polysubstituted by halogen or CN, it being also possible for one or more non-adjacent CH₂ groups to be replaced, in each case independently from one another, by -O-, -S-, -NH-, -N(CH₃)-, -CO-, -COO-, -OCO-, -OCO-O-, -S-CO-, -CO-S- or -C≡C- in such a manner that oxygen atoms are not linked directly to one another, or alternatively R is halogen, cyano or has independently one of the meanings given for P-(Sp-X)_n-.

39. Liquid crystal film according to claim 30 wherein the surface of the smooth Al₂O₃ layer is smoother than aluminum oxide coatings obtained by evaporation methods or sputtering.

40. Liquid crystal film or layer according to claim 1 wherein the surface of the smooth Al₂O₃ layer is smoother than aluminum oxide coatings obtained by evaporation methods or sputtering.
